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CR-137059

APPLICATION OF EARTH RESOURCES TECHNOLOGY SATELLITE

DATA TO URBAN DEVELOPMENT AND REGIONAL PLANNING:

TEST SITE - COUNTY OF LOS ANGELES. SR 124

E74-10365) APPLICATION OF EARTH
RESOURCES TECHNOLOGY SATELLITE DATA TO
URBAN DEVELOPMENT AND REGIONAL PLANNING:
TEST SITE - COUNTY OF LOS (General
Electric Co.) 9 p HC \$4.00 CSCL 08B

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September, 1973

Type 1 Progress Report
for Period July-August, 1973

Prepared for

GODDARD SPACE FLIGHT CENTER
Greenbelt, Md. 20771

SUMMARY FOR REPORTING PERIOD

GEMS Outputs, Post-Analysis

The GEMS Lab relocation-reassembly at Valley Forge during this period precluded any on-line analysis. However, in anticipation of the facility move, a rather concerted set of runs initiated during the last visit to Valley Forge by Jene McKnight was continued, resulting in the generation of a series of output mag tapes. The offline printouts from these tapes could be made downstream from the GEMS, per se, in the peripheral support computer facility. For the ERTS scene 1234-18021 using the NDPF MSS Bulk Standard Color Transparency, the 12 themes printouts for the following urban regions were thus generated:

1. West-Central Los Angeles
2. Long Beach
3. Glendale-Burbank
4. San Gabriel Valley
5. San Fernando Valley
6. Lancaster-Palmdale
7. Oxnard-Ventura
8. Bakers Field

These regions cover areas within the geographic jurisdictions of the following counties: Los Angeles, Orange, San Bernardino, Ventura, and Kern.

The offline printouts superpose themes that have been individually recorded on the slides taken on-line from the combiner TV screen. Here, preliminary analysis was described in the previous Type 1 Report, July, 1973. While the single theme and theme-plus-background slides facilitate analysis of individual themes in relation to reference/ground truth data, the multi-theme

printouts enable inter-themes comparative analysis of both same-sub-scene themes as well as different sub scenes/spectrally equivalent themes.

Underflight 73-108 Coverage-Data

Early in this reporting period, an underflight was flown by NASA AMES on July 2, 1973 with an A-1 configuration camera aboard a U-2. The rocking mode operation, with flight-lines mostly over the L.A. county mainland, nevertheless presented oblique coverage over most of the Test Site SR 124 while also giving additional orthogonal coverage for areas adjoining the flight-line groundtracks. The extensive amount of imagery from the 24" lens cameras using Aerial Color SO 242 film and 6" lens using Ektachrome Aerographic SO 397 film was arriving at both COLA-RPC and GE-SD locations towards the end of the reporting period. As had been anticipated even during the proposal write-up/data request scheduling, cloud-cover smog-occurrence problems present problems for summer coverage. In fact, the inclement weather during the desired flight period necessitated rescheduling of an earlier begun underflight to be completed on a subsequent date. As feared, the nearest-date ERTS coverages (June 30 and July 18) also have had severe cloud cover over the urban regions with the scenes of interest.

Plan for Next Bi-Monthly Period

Evaluation of the outputs from the GEMS runs reported above will be continued. Rather than continued analysis of film products only on the GEMS, the shift to analysis of the digital tapes for scenes already analyzed in transparency formats will be begun during the coming months.

This will initially be attempted on the GSFC-LARS Remote Terminal, while the GE Image 100 system at Daytona Beach is expected to be operationally available towards the end of the next period.

APPENDIX A-1

GENERAL ELECTRIC - REGIONAL PLANNING COMMISSION

ERTS-A PROJECT 124

PROGRESS REPORT #12

The following work was accomplished from June 26 to July 25, 1973.

1. ERTS and aircraft imagery displayed or loaned to the following persons:
 - a. Harold G. Stanley, Interstate Electronics Corporation. Display and loan of ERTS imagery and transparencies of Los Angeles, San Diego and Santa Barbara areas, for use in contract with the U. S. Environmental Protection Agency concerning ocean waste disposal. Enclosed are letters outlining this project.
 - b. John Shadle, Los Angeles City Department of Building and Safety. Display and loan of March 14, black and white roll of aerial photography for reproduction purposes, and use in geology.
 - c. Harry Kues and Michael Johnson, Los Angeles County Flood Control District. Display of ERTS and various aircraft imageries.
 - d. Mr. Agajanian, Southern California Association of Governments. Loan of ERTS and aircraft imagery for use in presentation.
 - e. Carlos A. Pearson, County Assessor Office. Display of ERTS and aircraft imagery.
2. Completion of visit of Jene McKnight to Valley Forge, Pennsylvania from June 24 to 27 for final analysis work on GEMS.
3. Receipt from GE and initial review and/or analysis:
 - a. ERTS black and white frames of May 7;
 - b. Several hundred 35 mm slides of GEMS display unit scenes;
 - c. Various technical papers and reports;
 - d. Computer printouts of GEMS display scenes;
 - e. ERTS one year anniversary notices; and,
 - f. Confirmation of aircraft overflight.

4. Inquiries regarding the ERTS Project were received from the following persons:
 - a. Gordon Sandford, Rockwell International Corporation, requested title and contract number of ERTS project. He is interested in land use data.
 - b. David Williams, Cal State University Long Beach History Department, inquired about ERTS and aircraft imagery for use in a multimedia presentation to U. S. and British historians.
 - c. Burt Anderson, professor of geography, Cal State University, Long Beach, inquired about ERTS imagery.
 - d. Donald Newbury, Cal State University Dominguez Hills, inquired about use of ERTS slides in art classes.
5. Continued work by Monir Sefain on the northwest corner of the Los Angeles basin using ERTS data.
6. Continued work by Darryl Goehring on preparation of an article discussing periodic change as revealed by ERTS imagery, and analytic work on ground truth verification of multispectral theme maps.
7. Receipt of the Final Report of the Regional Coastline Planning Program from SCAG which gives acknowledgment of the use of U-2 aerial photography provided by the Regional Planning Commission for work on inventorying of coastal resources.
8. On July 10, Jene McKnight of the Regional Planning Commission staff gave a presentation to Dr. Richard H. Green and Richard J. Blackwell of the Jet Propulsion Laboratory on the ERTS project. They are associated with the image processing facilities of JPL. Enclosed are a letter and agenda for a meeting at JPL requesting Mr. McKnight to give a presentation on ERTS.
9. On-going phone consultation and coordination between Los Angeles and Valley Forge Project Personnel.

GTM:jg

Enclosures

APPENDIX A-2

GENERAL ELECTRIC - REGIONAL PLANNING COMMISSION

ERTS-I Project 124

Progress Report #13

The following work was accomplished from July 26 to August 25, 1973.

1. ERTS and aircraft imagery displayed or loaned to the following persons:
 - a. Dennis Reid and David Cooper, Water Quality Section, Los Angeles County Flood Control District. Display of ERTS and various aircraft imagery, and loan of September, 1972 and March, 1973 ERTS symposium abstracts. They are interested in the feasibility of using ERTS in water quality management.
 - b. R. David Sievert, Los Angeles County Engineer. Display of ERTS and aircraft imagery. He is interested in water and waste management applications.
 - c. Eugene Pixley, Land and Water Use Analyst, California Department of Water Resources. Display of ERTS and aerial photography, and loan of March, 1973 black and white transparencies for the purpose of reproduction.
2. Inquiries regarding the ERTS Project were received from the following persons:
 - a. John Fox, Mayor Bradley's Office, concerning an update about the ERTS project in general.
 - b. Mike Inglis, University of New Mexico, concerning the ERTS project in general and requesting a copy of the final report.
 - c. Shirley Weigal, Paramount Pictures. She is interested in a sequence of ERTS images showing environmental changes.
 - d. Bob Sorsen, County Department of Data Services, requesting information on ERTS. He borrowed an ERTS print and reports.

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- e. Karen Vancil, Thomas Bros. Maps, concerning loan of March, 1973 flight coverage for purposes of making reproductions. Letter enclosed.
- 3. Receipt of RC-10 portions of the July 2, 1973, U-2 flight.
- 4. Mailed base maps to Ames Research Center in preparation for future aerial underflights.
- 5. Made arrangements for acquisition of photographic light table.
- 6. Continued work by Darryl Goehring on ground truth verification of multispectral theme maps and preparation of a report titled "Analysis of Four-Theme Map (red band only)". The report was previously transmitted to General Electric.
- 7. Continued work by Monir Sefain on the northwest corner of the Los Angeles Basin using ERTS data.
- 8. On-going phone consultation and coordination between Los Angeles and Valley Forge personnel.
- 9. Receipt from GE and initial review/or analysis;
 - a. Computer printouts of GEMS display scenes;
 - b. Various technical papers and reports;
 - c. Several 35mm slides of GEMS display unit scenes;
 - d. Samples of July 2, 1973 flight (rocker mode); and
 - e. NASA news release dated March 30, 1973.
- 10. Receipt and transmission to GE of letter from Jack J. Coe, California Department of Water Resources, concerning their investigative efforts on GEMS data.
- 11. Unofficial visit by Jene McKnight to University of Tokyo Institute of Industrial Science for general briefing on ERTS related research.

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13. Preparation of detailed index maps for the July 11, 1972, December 14, 1972 and March 14, 1973, U-2 photography (this task is 75 percent complete).
14. Acquisition of 12 film reels and the division of the March 14, 1973, U-2 photography into 12 sections (this task is 75 percent complete).
15. Preparation of a filing and index system for the ERTS imagery was initiated (task is 80 percent complete).

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Attachment